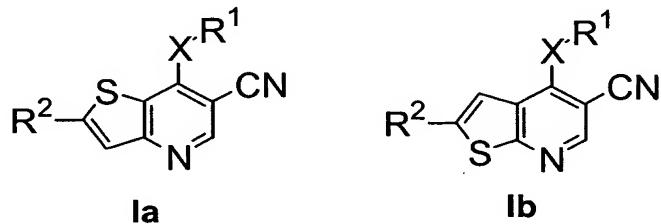


**IN THE CLAIMS:**

Please replace all prior versions of the claims in the application with the following claims:

1. (Currently amended) A compound of Formula (1a) and or Formula (1b)



wherein:

X is  $-\text{NH}-$ ,  $-\text{NR}^4-$ ,  $-\text{O}-$ ,  $-\text{S}(\text{O})_m-$ ,  $-\text{NHCH}_2-$ ;

m is an integer of 0-2;

n is an integer of 2-5;

q is an integer of 0-5;

$R^1$  is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of  $-J$ ,  $-NO_2$ ,  $-CN$ ,  $-N_3$ ,  $-CHO$ ,  $-CF_3$ ,  $-OCF_3$ ,  $-R^4$ ,  $-OR^4$ ,  $-S(O)_mR^4$ ,  $-NR^4R^4$ ,  $-NR^4S(O)_mR^4$ ,  $-OR^6OR^4$ ,  $-OR^6NR^4R^4$ ,  $-N(R^4)R^6OR^4$ ,  $-N(R^4)R^6NR^4R^4$ ,  $-NR^4C(O)R^4$ ,  $-C(O)R^4$ ,  $-C(O)OR^4$ ,  $-C(O)NR^4R^4$ ,  $-OC(O)R^4$ ,  $-OC(O)OR^4$ ,  $-OC(O)NR^4R^4$ ,  $NR^4C(O)R^4$ ,  $-NR^4C(O)OR^4$ ,  $-NR^4C(O)NR^4R^4$ ,  $-R^5OR^4$ ,  $-R^5NR^4R^4$ ,  $-R^5S(O)_mR^4$ ,  $-R^5C(O)R^4$ ,  $-R^5C(O)OR^4$ ,  $-R^5C(O)NR^4R^4$ ,  $-R^5OC(O)R^4$ ,  $-R^5OC(O)OR^4$ ,  $-R^5OC(O)NR^4R^4$ ,  $-R^5NR^4C(O)R^4$ ,  $-R^5NR^4C(O)OR^4$ ,  $-R^5NR^4C(O)NR^4R^4$ , or  $YR^7$ ;

$R^2$  is  $-H$ ,  $-R^3$ ,  $-J$ ,  $-C(O)XR^3$ ,  $-CHO$ , wherein the  $R^3$  group may be substituted by one or more groups selected from  $-C(O)XR^8$ ,  $-CHO$ ,  $-C(O)Q$ , 1,3-dioxolane,  $-R^8$ ,  $-(C(R^93)_2)_qXR^8$ ,  $-(C(R^93)_2)_qQ$ ,  $-X(C(R^93)_2)_nXR^8$ ,  $-X(C(R^93)_2)_nQ$ , or  $-X(C(R^93)_2)_qR^8$ ;

$R^3$  is alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

$R^4$  is H, alkyl of 1-6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, a *trans*- alkenyl of 2-6 carbon atoms, or an alkynyl of 2-6 carbon atoms;

$R^5$  is a divalent group comprising alkyl of 1-6 carbon atoms, alkenyl of 2-6 carbon atoms, and alkynyl of 2-6 carbon atoms;

$R^6$  is a divalent alkyl group of 2-6 carbon atoms;

$R^7$  is a cycloalkyl ring of 3-7 carbons, an aryl or heteroaryl ring, a aryl or heteroaryl fused to one to three aryl or heteroaryl rings, wherein any of the aryl, cycloalkyl, or heteroaryl rings may be optionally substituted with one to four substituents selected from the group consisting of -H, -aryl, -CH<sub>2</sub>-aryl, -NH-aryl, -O-aryl, -S(O)<sub>m</sub>-aryl, -J, -NO<sub>2</sub>, -CN, -N<sub>3</sub>, -CHO, -CF<sub>3</sub>, -OCF<sub>3</sub>, -R<sup>4</sup>, -OR<sup>4</sup>, -S(O)<sub>m</sub>R<sup>4</sup>, -NR<sup>4</sup>R<sup>4</sup>, -NR<sup>4</sup>S(O)<sub>m</sub>R<sup>4</sup>, -OR<sup>6</sup>OR<sup>4</sup>, -OR<sup>6</sup>NR<sup>4</sup>R<sup>4</sup>, -N(R<sup>4</sup>)R<sup>6</sup>OR<sup>4</sup>, -N(R<sup>4</sup>)R<sup>6</sup>NR<sup>4</sup>R<sup>4</sup>, -NR<sup>4</sup>C(O)R<sup>4</sup>, -C(O)R<sup>4</sup>, -C(O)OR<sup>4</sup>, -C(O)NR<sup>4</sup>R<sup>4</sup>, -OC(O)R<sup>4</sup>, -OC(O)OR<sup>4</sup>, -OC(O)NR<sup>4</sup>R<sup>4</sup>, -NR<sup>4</sup>C(O)R<sup>4</sup>, -NR<sup>4</sup>C(O)OR<sup>4</sup>, -NR<sup>4</sup>C(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>OR<sup>4</sup>, R<sup>5</sup>NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>S(O)<sub>m</sub>R<sup>4</sup>, -R<sup>5</sup>C(O)R<sup>4</sup>, -R<sup>5</sup>C(O)OR<sup>4</sup>, -R<sup>5</sup>C(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>C(O)R<sup>4</sup>, -R<sup>5</sup>C(O)OR<sup>4</sup>, -R<sup>5</sup>C(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>OC(O)R<sup>4</sup>, -R<sup>5</sup>OC(O)OR<sup>4</sup>, -R<sup>5</sup>OC(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>NR<sup>4</sup>C(O)R<sup>4</sup>, -R<sup>5</sup>NR<sup>4</sup>C(O)OR<sup>4</sup>, or -R<sup>5</sup>NR<sup>4</sup>C(O)NR<sup>4</sup>R<sup>4</sup>;

$R^8$  is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

$R^9$  is -R<sup>4</sup> or -F;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO<sub>2</sub>-, -SO<sub>2</sub>NH-, -C(OH)H-, -X(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>-, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>-, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>X-, -C≡C-, *cis*- and *trans*- -CH=CH- and cycloalkyl of 3-10 carbon atoms;

Q is NZZ' wherein Z and Z' may be the same or different and and may be H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl;

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, optionally substituted with -R<sup>4</sup> on a carbon or a nitrogen, or on nitrogen by a group -(C(R<sup>9</sup>)<sub>2</sub>)<sub>n</sub>XR<sup>3</sup>, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>n</sub>NZ"Z", or on carbon by a group -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>XR<sup>3</sup>, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>NZ"Z",

Z" and Z" taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur;

Z" and Z" may be H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

J is fluoro, chloro, bromo, and iodo; or

a pharmaceutically acceptable salt thereof.

2. (Original) A compound of formula Ia or Ib according to claim 1 wherein X is NH.

3. (Original) A compound of formula Ia or Ib according to claim 1 wherein R<sup>1</sup> is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -CF<sub>3</sub>, -OCF<sub>3</sub>, -R<sup>4</sup>, -OR<sup>4</sup> and YR<sup>7</sup>; and R<sup>7</sup> is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of -H, -J, -CF<sub>3</sub>, -OCF<sub>3</sub>, -R<sup>4</sup> and OR<sup>4</sup>.

4. (Original) A compound of formula Ia or Ib according to claim 1 wherein R<sup>1</sup> is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -Cl, -R<sup>4</sup> and -OR<sup>4</sup>.

5. (Original) A compound of formula Ia or Ib according to claim 4 wherein R<sup>4</sup> is alkyl of 1-6 carbon atoms.

6. (Original) A compound of formula Ia or Ib according to claim 1 wherein R<sup>2</sup> is substituted aryl or heteroaryl, wherein the substituent may be one or more groups selected from -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>Q.

7. (Original) A compound of formula Ia or Ib according to claim 6 wherein q is 1 to 3.

8. (Original) A compound of formula Ia or Ib according to claim 6 wherein R<sup>9</sup> is H.

9. (Original) A compound of formula Ia or Ib according to claim 6 wherein Q is NZZ' wherein Z and Z' may be the same or different and may be H, alkyl of 1 to 6 carbon atoms; or Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen and oxygen, said ring may be substituted on nitrogen or carbon by R<sup>4</sup> or on carbon by (CH<sub>2</sub>)<sub>2</sub>OH.

10. (Original) A compound of formula Ia or Ib according to claim 1 wherein R<sup>2</sup> is R<sup>3</sup> where R<sup>3</sup> is alkynyl of 2-6 carbon atoms, aryl or heteroaryl; which groups may be substituted by one or more groups selected from

-R<sup>8</sup>, -(CH<sub>2</sub>)<sub>q</sub>OR<sup>8</sup>, -(CH<sub>2</sub>)<sub>q</sub>NHR<sup>8</sup>, -(CH<sub>2</sub>)<sub>q</sub>NR<sup>4</sup>R<sup>8</sup>, -(CH<sub>2</sub>)<sub>q</sub>Q,

-O(CH<sub>2</sub>)<sub>n</sub>OR<sup>8</sup>, - NH(CH<sub>2</sub>)<sub>n</sub>OR<sup>8</sup>, - NR<sup>4</sup>(CH<sub>2</sub>)<sub>n</sub>OR<sup>8</sup>,

-O(CH<sub>2</sub>)<sub>n</sub>NHR<sup>8</sup>, - NH(CH<sub>2</sub>)<sub>n</sub>NHR<sup>8</sup>, - NR<sup>4</sup>(CH<sub>2</sub>)<sub>n</sub>NHR<sup>8</sup>,

-O(CH<sub>2</sub>)<sub>n</sub>NR<sup>4</sup>R<sup>8</sup>, - NH(CH<sub>2</sub>)<sub>n</sub>CR<sup>8</sup>, - NR<sup>4</sup>(CH<sub>2</sub>)<sub>n</sub>NR<sup>4</sup>R<sup>8</sup>,

-O(CH<sub>2</sub>)<sub>n</sub>Q, -NH(CH<sub>2</sub>)<sub>n</sub>Q, -NR<sup>4</sup>(CH<sub>2</sub>)<sub>n</sub>Q,

-O(CH<sub>2</sub>)<sub>q</sub>R<sup>8</sup>; -NH(CH<sub>2</sub>)<sub>q</sub>R<sup>8</sup>; or -NR<sup>4</sup>(CH<sub>2</sub>)<sub>q</sub>R<sup>8</sup>;

R<sup>4</sup> is H, alkyl of 1-6 carbon atoms;

R<sup>8</sup> is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO<sub>2</sub>-, -S-, -O-, -NR<sup>4</sup>-;

Q is NZZ' wherein Z and Z' may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R<sup>4</sup> on a carbon or a nitrogen, or on nitrogen by a group -(CH<sub>2</sub>)<sub>n</sub>OR<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NHR<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NR<sup>4</sup>R<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NZ"Z", or on carbon by a group -(CH<sub>2</sub>)<sub>q</sub>OR<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NHR<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NR<sup>4</sup>R<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NZ"Z",

Z" and Z" may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms

Z" and Z" taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur.

11. (Currently amended) A compound according to claim 1 ~~consisting of one of the following selected from the group consisting of:~~

7-[(2,4-Dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-phenylthieno[3,2-b]pyridine-6-carbonitrile;

2-Bromo-7-[(2,4-dichloro-5-methoxyphenyl)amino]-thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]thieno[2,3-b]pyridine-5-carbonitrile;

4-({3-Chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-iodothieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-methylthieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-methylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenoxy]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)thio]thieno[3,2-b]pyridine -6-carbonitrile;

7-[(2,4-Dichlorobenzyl) amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-[(4-(2-hydroxyethyl)piperazin-1-yl)methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-{6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-2-yl]benzoic acid;

4-{6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-2-yl]benzamide;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(4-methoxyphenyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-2-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-(1-Benzofuran-2-yl)-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(3-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-formylphenyl)thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[5-Cyano-4-(3,4,5-trimethoxy-phenylamino)-thieno[2,3-b]pyridin-2-yl]-butyric acid methyl ester;

2-(4-Hydroxybutyl)-4-[(3,4,5-trimethoxyphenyl)amino]-thieno[2,3-b]pyridine-5-carbonitrile;

2-[4-(4-Morpholiny)butyl]-4-[(3,4,5-trimethoxyphenyl)amino]-thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(trimethylsilyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-ethynylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(5-formylthien-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(hydroxymethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-Iodo-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-(4-Formylphenyl)-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(4-Methylpiperazin-1-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Morpholin-4-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Hydroxymethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-Iodo-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-Bromo-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(4-Phenoxyphenyl)amino]-2-[(E)-2-pyridin-4-ylethenyl]thieno[3,2-b]pyridine-6-carbonitrile;

*tert*-Butyl-(2E)-3-{6-cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl}prop-2-enoate;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[2,3-b]pyridine-5-carbonitrile;

(2E)-3-(6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl)prop-2-enoate;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(2-formyl-1-methyl-1H-imidazol-5-yl)thieno[3,2-b]pyridine-6-carbonitrile;

2-(4-Formylphenyl)-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(1E)-3-(4-methylpiperazin-1-yl)-3-oxoprop-1-enyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[3-(4-Methylpiperazin-1-yl)prop-1-ynyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(4-Methylpiperazin-1-yl)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{1-methyl-2-[(4-methylpiperazin-1-yl)methyl]-1H-imidazol-5-yl} thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl] thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-ethylpiperazin-1-ylmethyl)phenyl] thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2-Chloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2-Chloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-7-[(5-methoxy-2-methylphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(5-Methoxy-2-methylphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl) phenyl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[6-(4-methylpiperazin-1-ylmethyl)pyridin-3-yl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(4-methylpiperazin-1-ylmethyl)furan-3-yl] thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]furan-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylbut-1-ynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(diethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formyl-2-furyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)-2-furyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]-2-furyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-ethylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-pyrrolidin-1-yl)piperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(2-(dimethylamino)ethyl)(methyl)amino]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{3-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{3-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]-2-furyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)thien-2-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(2-formylthien-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formylthien-2-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{2-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{{[3-(dimethylamino)propyl](methyl)amino]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{{6-[(dimethylamino)methyl]pyridin-2-yl}ethynyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{{5-[(dimethylamino)methyl]thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{{(pyridin-4-ylmethyl)amino]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrrol-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{{(2-methoxyethyl)amino]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-{{[2-(methylthio)ethyl]amino]methyl}phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(thiomorpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-morpholin-4-ylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-{{3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino}-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-{{3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino}-2-{{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{{5-[(dimethylamino)methyl]pyridin-2-yl}ethynyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrazol-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(butylamino)methyl]phenyl}-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(1-oxidothiomorpholin-4-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[(3-hydroxypropyl)amino]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)pyridin-2-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(6-morpholin-4-ylpyridin-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(1,1-dioxidothiomorpholin-4-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-pyridin-2-ylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-phenylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4{[(2R,5S)-2,5-dimethylpiperazin-1-yl)methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)carbonyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(4-(2-methoxyphenyl)piperazin-1-yl)methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(3-methylbutyl)amino]methyl)phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(4-(methylsulfonyl)piperazin-1-yl)methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(4-(pyridin-2-yl)methyl)piperazin-1-yl)methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{1-[2-(dimethylamino)ethyl]-1H-pyrrol-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-[4-(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[(1-methyl-1H-imidazol-5-yl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrazol-4-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[(1-(2-hydroxyethyl)-1H-pyrazol-4-yl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[1-(2-morpholin-4-ylethyl)-1H-pyrazol-4-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(diethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

**7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[2-(dimethylamino)ethyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;**

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[1-(2-hydroxyethyl)-1H-pyrazol-4-yl]thieno[3,2-b]pyridine-6-carbonitrile;

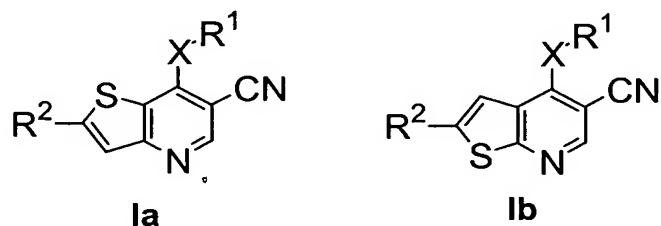
4-(6-cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl)-N,N-dimethylbenzamide;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]-3-furyl}thieno[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formyl-3-furyl)thieno[3,2-b]pyridine-6-carbonitrile.

12. (Original) A compound of formula Ia or Ib according to claim 1 wherein R<sup>1</sup> is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -CF<sub>3</sub>, -OCF<sub>3</sub>, -R<sup>4</sup>, -OR<sup>4</sup> and YR<sup>7</sup>; and R<sup>7</sup> is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of -H, -J, -CF<sub>3</sub>, -OCF<sub>3</sub>, -R<sup>4</sup> and OR<sup>4</sup>.

13. (Currently amended) A compound of Formula (1a) and or Formula (1b)



wherein:

X is -NH-;

q = 1-3;

$R^1$  is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of  $-Cl$ ,  $-R^4$ ,  $-OR^4$ ;

$R^2$  is  $R^3$  where  $R^3$  is substituted aryl or heteroaryl, wherein the substituent may be one or more groups selected from  $-(C(R^9)_2)_qQ$ ;

$R^4$  is alkyl of 1-6 carbon atoms;

$R^9$  is H;

Q is  $NZZ'$  wherein Z and Z' may be the same or different and ~~may be~~ are H, or alkyl of 1 to 6 carbon atoms;

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen and oxygen, said ring may be substituted on nitrogen or carbon by  $R^4$  or on carbon by  $(CH_2)_2OH$ ; or

a pharmaceutically acceptable salt thereof.

14. (Currently amended) A compound according to claim 13 ~~consisting of one of the following selected from the group consisting of:~~

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl) phenyl] thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(2-hydroxyethyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile.

15. (Currently amended) A compound of Formula (1a) and or Formula (1b)



Ia

Ib

wherein:

X is  $-\text{NH-}$ ;

n is an integer of 2-5

q is an integer of 0-5;

$R^1$  is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of  $-J$ ,  $-\text{CF}_3$ ,  $-\text{OCF}_3$ ,  $-\text{R}^4$ ,  $-\text{OR}^4$ , or  $\text{YR}^7$ ;

$R^2$  is  $R^3$  where  $R^3$  is alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

and  $R^3$  may be substituted by one or more groups selected from

$-\text{R}^8$ ,  $-(\text{CH}_2)_q\text{OR}^8$ ,  $-(\text{CH}_2)_q\text{NHR}^8$ ,  $-(\text{CH}_2)_q\text{NR}^4\text{R}^8$ ,  $-(\text{CH}_2)_q\text{Q}$ ,

$-\text{O}(\text{CH}_2)_n\text{OR}^8$ ,  $-\text{NH}(\text{CH}_2)_n\text{OR}^8$ ,  $-\text{NR}^4(\text{CH}_2)_n\text{OR}^8$ ,

$-\text{O}(\text{CH}_2)_n\text{NHR}^8$ ,  $-\text{NH}(\text{CH}_2)_n\text{NHR}^8$ ,  $-\text{NR}^4(\text{CH}_2)_n\text{NHR}^8$ ,

$-\text{O}(\text{CH}_2)_n\text{NR}^4\text{R}^8$ ,  $-\text{NH}(\text{CH}_2)_n\text{CR}^8$ ,  $-\text{NR}^4(\text{CH}_2)_n\text{NR}^4\text{R}^8$ ,

$-\text{O}(\text{CH}_2)_n\text{Q}$ ,  $-\text{NH}(\text{CH}_2)_n\text{Q}$ ,  $-\text{NR}^4(\text{CH}_2)_n\text{Q}$ ,

$-\text{O}(\text{CH}_2)_q\text{R}^8$ ;  $-\text{NH}(\text{CH}_2)_q\text{R}^8$ ; or  $-\text{NR}^4(\text{CH}_2)_q\text{R}^8$ ;

$R^4$  is H, alkyl of 1-6 carbon atoms;

R<sup>7</sup> is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of -H, -J, -CF<sub>3</sub>, -OCF<sub>3</sub>, -R<sup>4</sup>, -OR<sup>4</sup>;

R<sup>8</sup> is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO<sub>2</sub>-, -S-, -O-, -NR<sup>4</sup>;

Q is NZZ' wherein Z and Z' may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R<sup>4</sup> on a carbon or a nitrogen, or on nitrogen by a group -(CH<sub>2</sub>)<sub>n</sub>OR<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NHR<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NR<sup>4</sup>R<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NZ"Z", or on carbon by a group -(CH<sub>2</sub>)<sub>q</sub>OR<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NHR<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NR<sup>4</sup>R<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NZ"Z",

Z" and Z" may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms

Z" and Z" taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur;

And J is fluoro, chloro, bromo and iodo

16. (Currently amended) A compound according to claim 15 ~~consisting of one of the following~~ selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-phenylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-[(4-(2-hydroxyethyl)piperazin-1-yl)methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(4-methoxyphenyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-2-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-ethynylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

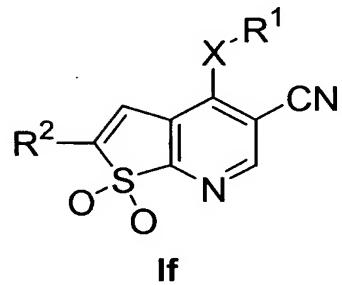
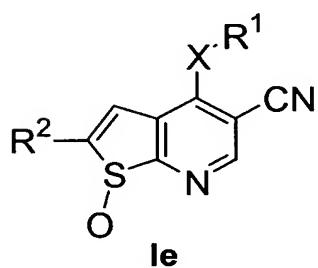
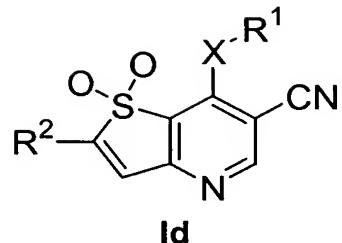
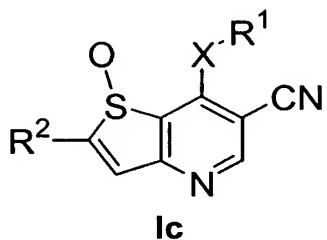
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(hydroxymethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(4-Methylpiperazin-1-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Morpholin-4-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Hydroxymethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;  
7-[(4-Phenoxyphenyl)amino]-2-[(E)-2-pyridin-4-ylethenyl]thieno[3,2-b]pyridine-6-carbonitrile;  
4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[2,3-b]pyridine-5-carbonitrile;  
4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[2,3-b]pyridine-5-carbonitrile;  
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(2-formyl-1-methyl-1H-imidazol-5-yl)thieno[3,2-b]pyridine-6-carbonitrile;  
2-[3-(4-Methylpiperazin-1-yl)prop-1-ynyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;  
2-{4-[(4-Methylpiperazin-1-yl)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;  
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{1-methyl-2-[(4-methylpiperazin-1-yl)methyl]-1H-imidazol-5-yl} thieno[3,2-b]pyridine-6-carbonitrile;  
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;  
2-{4-[(Dimethylamino)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile; and  
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile.  
7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile; and  
7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-yl)methyl]phenyl]thieno[3,2-b]pyridine-6-carbonitrile.

17. (Currently amended) A compound comprising a compound of Formula (1c), Formula (1d), (1e) or (1f):



wherein: X, R<sup>1</sup> and R<sup>2</sup> are as defined in claim 1.

18. (Currently amended) A compound according to claim 17 ~~consisting of one of the following selected from the group consisting of:~~

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]-1-oxo-1H-thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]-1,1-dioxo-1H-thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}-1-oxo-1H-thieno[3,2-b]pyridine-6-carbonitrile;

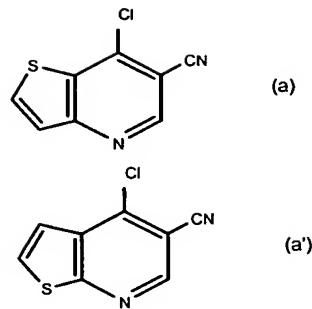
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}-1,1-dioxo-1H-thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-1-oxo-7-[(3,4,5-trimethoxyphenyl)amino]-1H-thieno[3,2-b]pyridine-6-carbonitrile; or

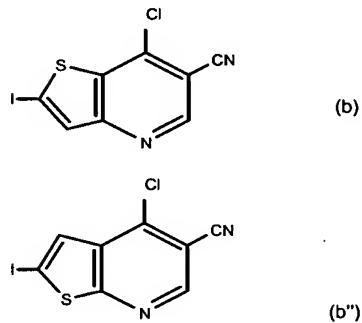
2-{4-[(Dimethylamino)methyl]phenyl}-1,1-dioxo-7-[(3,4,5-trimethoxyphenyl)amino]-1H-thieno[3,2-b]pyridine-6-carbonitrile.

19. (Currently amended) A process of producing a compound of Formula (Ia) and or Formula (Ib) of claim 1, wherein R<sup>2</sup> is iodine, comprising:

- treating with a base, in an inert solvent at reduced temperature a compound of Formula (a) or (a');



b.) adding iodine to the compound in step (a) to form a compound of Formula (b) or (b'); and

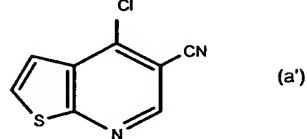
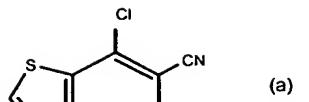


c.) adding a compound of formula  $R^1XH$  to the compound in step (b) to form a compound of Formula (la) or (lb), wherein  $R^2$  is iodine.

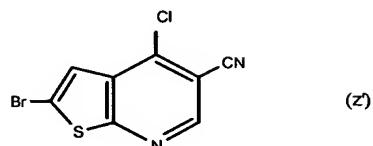
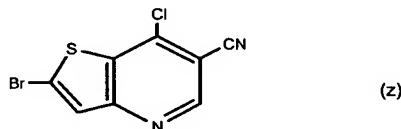
20. (Canceled)

21. (Original) A process of producing a compound of Formula (la) or (lb) of claim 1, wherein  $R^2$  is bromine, comprising:

a.) treating with a base, in an inert solvent at reduced temperature a compound of Formula (a) or (a');



b.) adding 1,1-dibromo-1,1,2,2-tetrafluoroethane or bromine to the compound in step (a) to form a compound of Formula (z) or (z'); and



c.) adding a compound of formula  $R^1XH$  to the compound in step (b) to form a compound of Formula (1a) or (1b), wherein  $R^2$  is bromine.

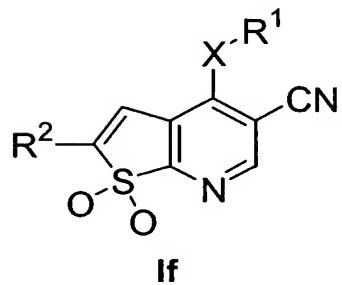
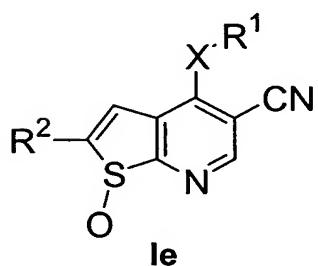
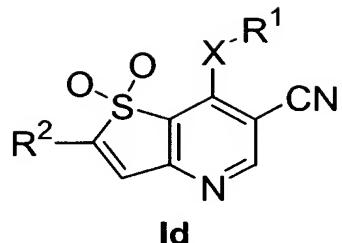
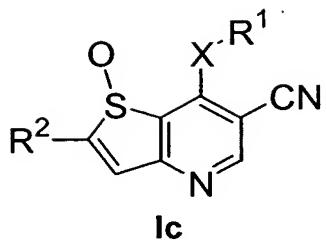
22-37. (Canceled)

38. (Currently amended) A pharmaceutical composition comprising a compound of Formula (1a) and or (1b) or a pharmaceutically acceptable salt thereof.

39. (Original) A pharmaceutical composition of formula 1a or 1b according to claim 38 wherein X is NH.

40. (Previously presented) A pharmaceutical composition of formula 1a or 1b according to claim 38 wherein  $R^1$  is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of  $-J$ ,  $-CF_3$ ,  $-OCF_3$ ,  $-R^4$ ,  $-OR^4$  and  $YR^7$ ; and  $R^7$  is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of  $-H$ ,  $-J$ ,  $-CF_3$ ,  $-OCF_3$ ,  $-R^4$  and  $OR^4$ .

41. (Original) A pharmaceutical composition comprising a compound of Formula (1c), (1d), (1e) and (1f)



wherein:

X is -NH-, -NR<sup>4</sup>-, -O-, -S(O)<sub>m</sub>-, -NHCH<sub>2</sub>-;

m is an integer of 0-2;

n is an integer of 2-5;

q is an integer of 0-5;

R<sup>1</sup> is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of -J, -NO<sub>2</sub>, -CN, -N<sub>3</sub>, -CHO, -CF<sub>3</sub>, -OCF<sub>3</sub>, -R<sup>4</sup>, -OR<sup>4</sup>, -S(O)<sub>m</sub>R<sup>4</sup>, -NR<sup>4</sup>R<sup>4</sup>, -NR<sup>4</sup>S(O)<sub>m</sub>R<sup>4</sup>, -OR<sup>6</sup>OR<sup>4</sup>, -OR<sup>6</sup>NR<sup>4</sup>R<sup>4</sup>, -N(R<sup>4</sup>)R<sup>6</sup>OR<sup>4</sup>, -N(R<sup>4</sup>)R<sup>6</sup>NR<sup>4</sup>R<sup>4</sup>, -NR<sup>4</sup>C(O)R<sup>4</sup>, -C(O)R<sup>4</sup>, -C(O)OR<sup>4</sup>, -C(O)NR<sup>4</sup>R<sup>4</sup>, -OC(O)R<sup>4</sup>, -OC(O)OR<sup>4</sup>, -OC(O)NR<sup>4</sup>R<sup>4</sup>, NR<sup>4</sup>C(O)R<sup>4</sup>, -NR<sup>4</sup>C(O)OR<sup>4</sup>, -NR<sup>4</sup>C(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>OR<sup>4</sup>, -R<sup>5</sup>NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>S(O)<sub>m</sub>R<sup>4</sup>, -R<sup>5</sup>C(O)R<sup>4</sup>, -R<sup>5</sup>C(O)OR<sup>4</sup>, -R<sup>5</sup>C(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>OC(O)R<sup>4</sup>, -R<sup>5</sup>OC(O)OR<sup>4</sup>, -R<sup>5</sup>OC(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>NR<sup>4</sup>C(O)R<sup>4</sup>, -R<sup>5</sup>NR<sup>4</sup>C(O)OR<sup>4</sup>, -R<sub>5</sub>NR<sub>4</sub>C(O)NR<sup>4</sup>R<sup>4</sup>, or YR<sup>7</sup>;

R<sup>2</sup> is -H, -R<sup>3</sup>, -J, -C(O)XR<sup>3</sup>, -CHO, wherein the R<sup>3</sup> group may be substituted by one or more groups selected from -C(O)XR<sup>8</sup>, -CHO, -C(O)Q, 1,3-dioxolane, -R<sup>8</sup>, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>XR<sup>8</sup>, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>Q, -X(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>XR<sup>8</sup>, -X(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>Q, or -X(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>R<sup>8</sup>;

R<sup>3</sup> is alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

$R^4$  is H, alkyl of 1-6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, a *trans*- alkenyl of 2-6 carbon atoms, or an alkynyl of 2-6 carbon atoms;

$R^5$  is a divalent group comprising alkyl of 1-6 carbon atoms, alkenyl of 2-6 carbon atoms, and alkynyl of 2-6 carbon atoms;

$R^6$  is a divalent alkyl group of 2-6 carbon atoms;

$R^7$  is a cycloalkyl ring of 3-7 carbons optionally substituted with one to four substituents selected from the group consisting of alkyl groups of 1 to 6 carbons, an aryl or heteroaryl ring, a aryl or heteroaryl fused to one to three aryl or heteroaryl rings, wherein any of the aryl or heteroaryl rings may be optionally substituted with one to four substituents selected from the group consisting of -H, -aryl, - $CH_2$ -aryl, -NH-aryl, -O-aryl, -S(O)<sub>m</sub>-aryl, -J, -NO<sub>2</sub>, -CN, -N<sub>3</sub>, -CHO, -CF<sub>3</sub>, -OCF<sub>3</sub>, -R<sup>4</sup>, -OR<sup>4</sup>, -S(O)<sub>m</sub>R<sup>4</sup>, -NR<sup>4</sup>R<sup>4</sup>, -NR<sup>4</sup>S(O)<sub>m</sub>R<sup>4</sup>, -OR<sup>6</sup>OR<sup>4</sup>, -OR<sup>6</sup>NR<sup>4</sup>R<sup>4</sup>, -N(R<sup>4</sup>)R<sup>6</sup>OR<sup>4</sup>, -N(R<sup>4</sup>)R<sup>6</sup>NR<sup>4</sup>R<sup>4</sup>, -NR<sup>4</sup>C(O)R<sup>4</sup>, -C(O)R<sup>4</sup>, -C(O)OR<sup>4</sup>, -C(O)NR<sup>4</sup>R<sup>4</sup>, -OC(O)R<sup>4</sup>, -OC(O)OR<sup>4</sup>, -OC(O)NR<sup>4</sup>R<sup>4</sup>, -NR<sup>4</sup>C(O)OR<sup>4</sup>, -NR<sup>4</sup>C(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>OR<sup>4</sup>, R<sup>5</sup>NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>S(O)<sub>m</sub>R<sup>4</sup>, -R<sup>5</sup>C(O)R<sup>4</sup>, -R<sup>5</sup>C(O)OR<sup>4</sup>, -R<sup>5</sup>C(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>C(O)R<sup>4</sup>, -R<sup>5</sup>C(O)OR<sup>4</sup>, -R<sup>5</sup>C(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>OC(O)R<sup>4</sup>, -R<sup>5</sup>OC(O)OR<sup>4</sup>, -R<sup>5</sup>OC(O)NR<sup>4</sup>R<sup>4</sup>, -R<sup>5</sup>NR<sup>4</sup>C(O)R<sup>4</sup>, -R<sup>5</sup>NR<sup>4</sup>C(O)OR<sup>4</sup>, or -R<sup>5</sup>NR<sup>4</sup>C(O)NR<sup>4</sup>R<sup>4</sup>;

$R^8$  is -H, alkenyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

$R^9$  is -R<sup>4</sup> or -F;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO<sub>2</sub>-, -SO<sub>2</sub>NH-, -C(OH)H-, -X(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>-, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>-, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>X-, -C≡C-, *cis*- and *trans*- -CH=CH- and cycloalkyl of 3-10 carbon atoms;

Q is NZZ' wherein Z and Z' may be the same or different and are H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R<sup>4</sup> on a carbon or a nitrogen, or on nitrogen by a group -(C(R<sup>9</sup>)<sub>2</sub>)<sub>n</sub>XR<sup>3</sup>, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>n</sub>NZ"Z", or on carbon by a group -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>XR<sup>3</sup>, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>NZ"Z",

wherein Z" and Z" may be the same or different and are H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and Z" and Z"

taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur; and

J is fluoro, chloro, bromo, and iodo, and a pharmaceutically acceptable carrier.

42. (Currently amended) A pharmaceutical composition according to claim 41 38 ~~consisting of one of the following wherein the compound is selected from the group consisting of:~~

7-[(2,4-Dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-phenylthieno[3,2-b]pyridine-6-carbonitrile;

2-Bromo-7-[(2,4-dichloro-5-methoxyphenyl)amino]-thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]thieno[2,3-b]pyridine-5-carbonitrile;

4-({3-Chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-iodothieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-methylthieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-methylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenoxy)]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)thio]thieno[3,2-b]pyridine -6-carbonitrile;

7-[(2,4-Dichlorobenzyl) amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(2-hydroxyethyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-{6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-2-yl}benzoic acid;

4-{6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-2-yl}benzamide;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(4-methoxyphenyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-2-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-(1-Benzofuran-2-yl)-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(3-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-formylphenyl)thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[5-Cyano-4-(3,4,5-trimethoxy-phenylamino)-thieno[2,3-b]pyridin-2-yl]-butyric acid methyl ester;

2-(4-Hydroxybutyl)-4-[(3,4,5-trimethoxyphenyl)amino]-thieno[2,3-b]pyridine-5-carbonitrile;

2-[4-(4-Morpholinyl)butyl]-4-[(3,4,5-trimethoxyphenyl)amino]-thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(trimethylsilyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-ethynylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(5-formylthien-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(hydroxymethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-iodo-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-(4-Formylphenyl)-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(4-Methylpiperazin-1-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Morpholin-4-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Hydroxymethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-Iodo-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-Bromo-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(4-Phenoxyphenyl)amino]-2-[(E)-2-pyridin-4-ylethenyl]thieno[3,2-b]pyridine-6-carbonitrile;

*tert*-Butyl-(2E)-3-{6-cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl}prop-2-enoate;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[2,3-b]pyridine-5-carbonitrile;

(2E)-3-(6-Cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl)prop-2-enoate;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(2-formyl-1-methyl-1H-imidazol-5-yl)thieno[3,2-b]pyridine-6-carbonitrile;

2-(4-Formylphenyl)-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(1E)-3-(4-methylpiperazin-1-yl)-3-oxoprop-1-enyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[3-(4-Methylpiperazin-1-yl)prop-1-ynyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(4-Methylpiperazin-1-yl)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{1-methyl-2-[(4-methylpiperazin-1-yl)methyl]-1H-imidazol-5-yl} thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl] thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-ethylpiperazin-1-ylmethyl)phenyl] thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2-Chloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2-Chloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}7-[(5-methoxy-2-methylphenyl)amino]-thieno[3,2-b]pyridine-6-carbonitrile;

7-[(5-Methoxy-2-methylphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl] thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]-2-{4[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichlorophenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl] thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[6-(4-methylpiperazin-1-ylmethyl)pyridin-3-yl] thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(4-methylpiperazin-1-ylmethyl)furan-3-yl]thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]furan-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylbut-1-ynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(diethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formyl-2-furyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)-2-furyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]-2-furyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-ethylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-pyrrolidin-1-yl)piperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{{[2-(dimethylamino)ethyl](methyl)amino]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{3-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{3-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]-2-furyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(1,3-dioxolan-2-yl)thien-2-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(2-formylthien-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formylthien-2-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{2-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{{[3-(dimethylamino)propyl](methyl)amino]methyl}phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-2-yl}ethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]thien-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{{(pyridin-4-ylmethyl)amino}methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrrol-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{{(2-methoxyethyl)amino}methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-{{[2-(methylthio)ethyl]amino}methyl}phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(thiomorpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-morpholin-4-ylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-{{3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino}-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-{{3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino}-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{{5-[(dimethylamino)methyl]pyridin-2-yl}ethynyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrazol-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{{5-[(4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

2-{{4-[(butylamino)methyl]phenyl}-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{{4-[(1-oxidothiomorpholin-4-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(diethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(3-hydroxypropyl)amino]methyl)phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)pyridin-2-]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(6-morpholin-4-ylpyridin-3-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-iodothieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(1,1-dioxidothiomorpholin-4-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-pyridin-2-ylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-phenylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4{[(2R,5S)-2,5-dimethylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)carbonyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(2-methoxyphenyl)piperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-[(3-methylbutyl)amino]methyl)phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(methylsulfonyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-ethoxyphenyl)amino]-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(4-{[4-(pyridin-2-ylmethyl)piperazin-1-yl]methyl}phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{1-[2-(dimethylamino)ethyl]-1H-pyrrol-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichlorophenyl)amino]-2-[4-(dimethylamino)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[(1-methyl-1H-imidazol-5-yl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{6-[(dimethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(1H-pyrazol-4-yl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{{1-(2-hydroxyethyl)-1H-pyrazol-4-yl}ethynyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[1-(2-morpholin-4-ylethyl)-1H-pyrazol-4-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(dimethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(diethylamino)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{4-[2-(dimethylamino)ethyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

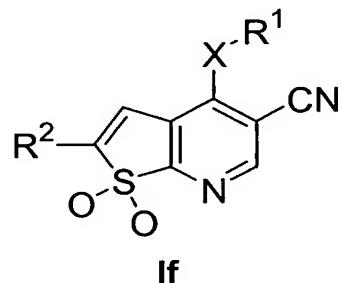
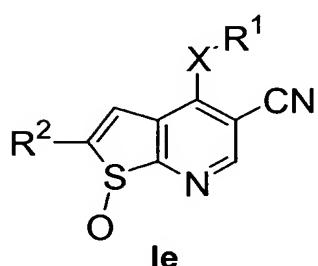
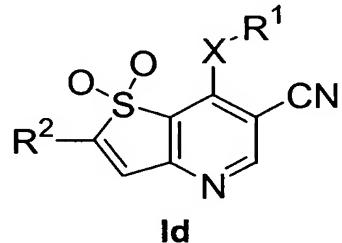
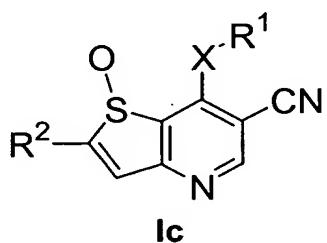
7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[1-(2-hydroxyethyl)-1H-pyrazol-4-yl]thieno[3,2-b]pyridine-6-carbonitrile;

4-{6-cyano-7-[(2,4-dichloro-5-methoxyphenyl)amino]thieno[3,2-b]pyridin-2-yl}-N,N-dimethylbenzamide;

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]-3-furyl}thieno[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-(5-formyl-3-furyl)thieno[3,2-b]pyridine-6-carbonitrile and a pharmaceutically acceptable carrier.

43. (Original) A compound of Formula (1c), Formula (1d), (1e), and (1f)



wherein:

X is  $-\text{NH-}$ ;

q is an integer of 0-5;

$R^1$  is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of  $-\text{J}$ ,  $-\text{CF}_3$ ,  $-\text{OCF}_3$ ,  $-\text{R}^4$ ,  $-\text{OR}^4$ , or  $\text{YR}^7$ ;

$R^2$  is  $-\text{R}^3$ , wherein  $\text{R}^3$  is alkynyl of 2-6 carbon atoms, aryl or heteroaryl, group may be one groups selected from  $-\text{C}(\text{O})\text{XR}^8$ ,  $-\text{CHO}$ ,  $-\text{C}(\text{O})\text{Q}$ , 1,3-dioxolane,  $-\text{R}^8$ ;

$R^4$  is H, alkyl of 1-6 carbon atoms;

$R^7$  is an aryl or heteroaryl ring optionally substituted with one to four substituents selected from the group consisting of  $-\text{H}$ ,  $-\text{CF}_3$ ,  $-\text{OCF}_3$ ,  $-\text{R}^4$ ,  $-\text{OR}^4$ ;

$R^8$  is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO<sub>2</sub>-;

Q is NZZ' wherein Z and Z' may be the same or different and are H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R<sup>4</sup> on a carbon or a nitrogen, or on nitrogen by a group -(C(R<sup>9</sup>)<sub>2</sub>)<sub>n</sub>XR<sup>3</sup>, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>n</sub>NZ"Z", or on carbon by a group -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>XR<sup>3</sup>, -(C(R<sup>9</sup>)<sub>2</sub>)<sub>q</sub>NZ"Z",

wherein Z" and Z" may be the same or different and are H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and Z" and Z" taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur; and

J is fluoro, chloro, bromo, and iodo, and a pharmaceutically acceptable carrier.

44. (Currently amended) A pharmaceutical composition according to claim 41 ~~consisting of one of the following wherein the compound is selected from the group consisting of:~~

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]-1-oxo-1H-thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]-1,1-dioxo-1H-thieno [3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}-1-oxo-1H-thieno[3,2-b]pyridine-6-carbonitrile;

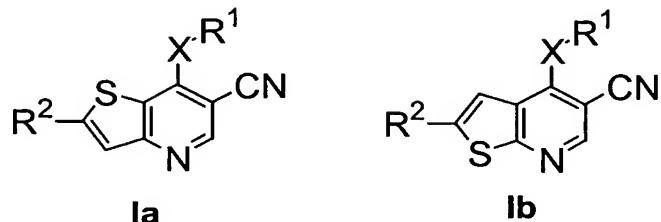
7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}-1,1-dioxo-1H-thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-1-oxo-7-[(3,4,5-trimethoxyphenyl)amino]-1H-thieno[3,2-b]pyridine-6-carbonitrile; and

2-{4-[(Dimethylamino)methyl]phenyl}-1,1-dioxo-7-[(3,4,5-trimethoxyphenyl)amino]-1H-thieno[3,2-b]pyridine-6-carbonitrile and a pharmaceutically acceptable carrier.

45-52. (Canceled)

53. (Currently amended) A pharmaceutical composition comprising a compound of Formula (1a) and or Formula (1b)



wherein:

X is  $-\text{NH}-$ ,

n is an integer of 2-5;

q is an integer of 0-5;

$R^1$  is a phenyl ring optionally substituted with one to four substituents selected from the group consisting of  $-J$ ,  $-CF_3$ ,  $-OCF_3$ ,  $-R^4$ ,  $-OR^4$ , or  $YR^7$ ;

$R^2$  is  $R^3$  where  $R^3$  is alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

and may be substituted by one or more groups selected from

-R<sup>8</sup>, -(CH<sub>2</sub>)<sub>q</sub>OR<sup>8</sup>, -(CH<sub>2</sub>)<sub>q</sub>NHR<sup>8</sup>, -(CH<sub>2</sub>)<sub>q</sub>NR<sup>4</sup>R<sup>8</sup>, -(CH<sub>2</sub>)<sub>q</sub>Q,

-O(CH<sub>2</sub>)<sub>n</sub>OR<sup>8</sup>, -NH(CH<sub>2</sub>)<sub>n</sub>OR<sup>8</sup>, -NR<sup>4</sup>(CH<sub>2</sub>)<sub>n</sub>OR<sup>8</sup>,

-O(CH<sub>2</sub>)<sub>n</sub>NHR<sup>8</sup>, -NH(CH<sub>2</sub>)<sub>n</sub>NHR<sup>8</sup>, -NR<sup>4</sup>(CH<sub>2</sub>)<sub>n</sub>NHR<sup>8</sup>,

-O(CH<sub>2</sub>)<sub>n</sub>NR<sup>4</sup>R<sup>8</sup>, -NH(CH<sub>2</sub>)<sub>n</sub>CR<sup>8</sup>, -NR<sup>4</sup>(CH<sub>2</sub>)<sub>n</sub>NR<sup>4</sup>R<sup>8</sup>,

-O(CH<sub>2</sub>)<sub>n</sub>Q, -NH(CH<sub>2</sub>)<sub>n</sub>Q, -NR<sup>4</sup>(CH<sub>2</sub>)<sub>n</sub>Q,

- O(CH<sub>2</sub>)<sub>q</sub>R<sup>8</sup>; - NH(CH<sub>2</sub>)<sub>q</sub>R<sup>8</sup>; or - NR<sup>4</sup>(CH<sub>2</sub>)<sub>q</sub>R<sup>8</sup>

$R^4$  is H, alkyl of 1-6 carbon atoms;

$R^7$  is an aryl or heteroaryl ring, optionally substituted with one to four substituents selected from the group consisting of  $-H$ ,  $-J$ ,  $-CF_3$ ,  $-OCF_3$ ,  $-R^4$ ,  $-OR^4$ ;

$R^8$  is -H, alkyl of 1 to 6 carbon atoms, *cis*-alkenyl of 2-6 carbon atoms, *trans*-alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl or heteroaryl;

Y is -C(O)-, -C(O)O-, -OC(O)-, -C(O)NH-, -NHC(O)-, -NHSO<sub>2</sub>-, -S-, -O-, -NR<sup>4</sup>-;

Q is NZZ' wherein Z and Z' may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms, alkenyl of 2-6 carbon atoms, alkynyl of 2-6 carbon atoms, aryl, or heteroaryl, and

Z and Z' taken together with the nitrogen to which they are attached may form a heterocyclic ring which may have an additional heteroatom selected from nitrogen, oxygen, and sulfur, and may comprise morpholine, piperazine, piperidine, optionally substituted with -R<sup>4</sup> on a carbon or a nitrogen, or on nitrogen by a group -(CH<sub>2</sub>)<sub>n</sub>OR<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NHR<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NR<sup>4</sup>R<sup>3</sup>, -(CH<sub>2</sub>)<sub>n</sub>NZ"Z", or on carbon by a group -(CH<sub>2</sub>)<sub>q</sub>OR<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NHR<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NR<sup>4</sup>R<sup>3</sup>, -(CH<sub>2</sub>)<sub>q</sub>NZ"Z",

Z" and Z" may be the same or different and are selected from H, alkyl of 1 to 6 carbon atoms

Z" and Z" taken together with the nitrogen to which they are attached may form a heterocyclic ring which may contain an additional heteroatom selected from nitrogen, oxygen and sulfur;

And J is fluoro, chloro, bromo and iodo and a pharmaceutically acceptable carrier.

54. (Currently amended) A compound composition according to claim 53 wherein the compound is selected from the group consisting of:

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-phenylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-morpholinylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(4-[(4-(2-hydroxyethyl)piperazin-1-yl)methyl]phenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(piperidin-1-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[(4-methoxyphenyl)ethynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-2-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-ethynylthieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-4-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{5-[(4-methylpiperazin-1-yl)methyl]thien-3-yl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[5-(morpholin-4-ylmethyl)thien-3-yl]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(4-hydroxypiperidin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[4-(hydroxymethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(4-Methylpiperazin-1-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Morpholin-4-ylmethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-[4-(Hydroxymethyl)phenyl]-7-[(4-phenoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(4-Phenoxyphenyl)amino]-2-[(E)-2-pyridin-4-ylethenyl]thieno[3,2-b]pyridine-6-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[2,3-b]pyridine-5-carbonitrile;

4-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(pyridin-3-ylethynyl)thieno[2,3-b]pyridine-5-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-(2-formyl-1-methyl-1H-imidazol-5-yl)thieno[3,2-b]pyridine-6-carbonitrile;

2-[3-(4-Methylpiperazin-1-yl)prop-1-ynyl]-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(4-Methylpiperazin-1-yl)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{1-methyl-2-[(4-methylpiperazin-1-yl)methyl]-1H-imidazol-5-yl} thieno[3,2-b]pyridine-6-carbonitrile;

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-[3-(4-methylpiperazin-1-yl)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

2-{4-[(Dimethylamino)methyl]phenyl}-7-[(3,4,5-trimethoxyphenyl)amino]thieno[3,2-b]pyridine-6-carbonitrile;

~~7-((3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl)amino)-2-iodothieno[3,2-b]pyridine-6-carbonitrile;~~

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylmethyl)phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[4-(morpholin-4-ylbut-1-ynyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(dimethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-(4-formylphenyl)thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-{4-[(4-methylpiperazin-1-yl)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

7-({3-chloro-4-[(1-methyl-1H-imidazol-2-yl)thio]phenyl}amino)-2-[3-(diethylamino)prop-1-ynyl]thieno[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-Dichloro-5-methoxyphenyl)amino]-2-{4-[(dimethylamino)methyl]phenyl}thieno[3,2-b]pyridine-6-carbonitrile;

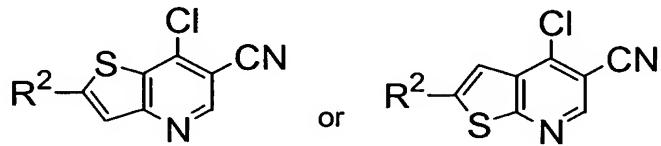
7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-{5-[4-methylpiperazin-1-yl)methyl]pyridin-2-yl}thieno[3,2-b]pyridine-6-carbonitrile; and

7-[(2,4-dichloro-5-methoxyphenyl)amino]-2-[4-(piperazin-1-yl)methyl]phenyl]thieno[3,2-b]pyridine-6-carbonitrile;

~~and a pharmaceutically acceptable carrier.~~

55. (Original) A process for preparing a compound of formula (1a) or (1b) as defined in claim 1 or a pharmaceutically acceptable salt thereof, which comprises one of the following:

a) reacting a compound of formula:



or an S-oxide or S-dioxide thereof; wherein R<sup>2</sup> is as defined in Claim 1 with a compound of formula R<sup>1</sup>XH where R<sup>1</sup> and X are as defined in Claim 1 to give a compound of formula I(a) or (Ib);

or

b) reacting a compound of formula 1a or 1b or an S-oxide or S-dioxide thereof in which R<sup>2</sup> is a reactive substituent group to give a compound of formula 1a or 1b in which R<sup>2</sup> is a different substituent group as defined in claim 1;

or

c) optionally converting a compound of formula (1a) or (1b) to a pharmaceutically acceptable salt thereof.

56. (Canceled)